

Hospital which have appeared in recent issues of CALIFORNIA AND WESTERN MEDICINE. Therefore, it is not necessary to reiterate what has been previously stated concerning indicated changes for that institution. In one press clipping in this issue\* commenting upon the requested budgets of the charitable institutions of the County of Los Angeles, the following estimates for maintenance costs for one year were given:

	Budget Estimate
Los Angeles County General Hospital.....	\$5,595,511
Olive View Sanatorium (tuberculosis).....	1,335,982

The above are financial amounts of little less than amazing proportions, made necessary to cover the maintenance costs of these large charitable institutions in one of the metropolitan centers of California.

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**Present Charitable Institutions Ordinance of Los Angeles County.**—The statutes of California place the primary responsibility of expending these public moneys on the five members of the Board of Supervisors of Los Angeles. That Board, however, has many other responsibilities, and by Ordinance No. 2168 (New Series) Eff. 11-30-1932 it is provided that a county employee known as the "Superintendent of Charities" shall be vested with the authority to manage the aforementioned institutions, the exact language being as follows:

Rule 1. Subject to the direction of the Board of Supervisors and rules and regulations adopted by the Board, the Superintendent of Charities shall be the head of, and it shall be his duty to direct, supervise and control all activities of the Department of Charities, including the General Hospital, Rancho Los Amigos, Olive View Sanatorium, County Cemetery, and the Bureau of County Welfare. He shall enforce rules and regulations for the conduct and government of the various bureaus of the Department of Charities and of the charitable institutions of the county.

Rule 2. The Superintendent of Charities shall have power to appoint the Executive Superintendent of the General Hospital, Superintendent of Rancho Los Amigos, Superintendent of Olive View Sanatorium, Superintendent of the County Cemetery, and the Superintendent of the Bureau of County Welfare.

Rule 2a. Subject to the supervision and direction of the Superintendent of Charities the Executive Superintendent of the General Hospital shall have immediate charge and control of the General Hospital, and with the approval of the Superintendent of Charities shall have the power to appoint all employees of the General Hospital.

*Comment.*—In a plan for an Institutions Commission for Los Angeles County, the duties and powers now vested in the Superintendent of Charities would be vested in the Commission, the Commission taking over the Superintendent's major functions as to appointments and so on, and he in turn, "perhaps, occupying a place in relation to the Institutions Commission similar to that which the Executive Superintendent of the General Hospital (see Rule 2a above) at present holds to himself.

\* For recent press clippings concerning Los Angeles County Hospital see page 477.

**How Should an Institutions Commission Be Composed?**—A proposed plan for an institutions Commission would be somewhat as follows:

*Number of Members.*—Seven.

*Term of Office.*—Seven years each.

*How Appointed.*—One member to be appointed each year by the Board of Supervisors. (The terms of supervisors are four years each, in a staggering arrangement. Therefore, appointees in succeeding years would be responsive to the wishes of the electorate as expressed in their election of supervisors.)

*Qualifications.*—The seven members of the Institutions Commission to be citizens, who have had prior legal residence in the county for at least five years, and who have had special training or experience in administrative matters having to do with business, or with social welfare activities, or with professional work. The honorarium to be twenty dollars for each meeting, provided, that no more than three meetings in a single month would be entitled to such honorarium.

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**Institutions Commissions Can Be Created by Ordinances or by Charter Amendments.**—In Alameda County, the Institutions Commission came into being through an ordinance, and it has done its work so well since 1917 that no effort has ever been made by succeeding Boards of Supervisors to repeal the enactments. However, another method, and one which could be used in counties operating under county charters—as in Los Angeles County, for instance—would be the submittal of a charter amendment that might create an Institutions Commission. An Institutions Commission, once so created, would continue to operate until such time as the electorate deemed it wise to provide otherwise.

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**Government of County Hospitals in California of Vital Importance.**—This subject of Institutions Commissions, as above commented upon, will be referred to in future issues, but it is to be hoped that what has been stated here and elsewhere in this issue of the Official Journal may stimulate further thought and discussion. No public health problem in California has closer implications with medical practice in this state than the publicly supported county hospitals. These institutions can be potent factors in determining what the future shall bring to scientific and organized medicine. It is to be desired that even during the coming vacation months the subject will receive attention by the proper medical society committees in every county in California.

#### MEDICAL CARE OF MIGRATORY WORKERS

**"Agricultural Workers' Health and Medical Association," a Corporation.**—Under the caption, "California 'Migrants': 'Workers' and 'Rovers,'" the problem of medical care for migratory workers in California received brief editorial

comment in *CALIFORNIA AND WESTERN MEDICINE* in its issue of August, 1937, on page 74. Some public health factors having relation to these itinerant workers have become so serious that the Federal Government, through the Farm Security Administration, acting in coöperation with the California State Board of Public Health, recently brought into being a nonprofit corporation known as the "Agricultural Workers Health and Medical Association," the corporation taking up its work with an appropriation of \$100,000, secured from the Federal Government.

A report, submitted by Dr. Karl L. Schaupp of San Francisco, one of the seven directors of the corporation, outlines the purposes and tentative plans under which it is proposed to work. Request is made for comments and criticisms, the plan having been previously discussed with representatives of twenty county medical societies of California, in whose districts the medical care of migratory workers has become an important problem. Members of the Association are urged to read the report of Doctor Schaupp, which appears on page 460. He and his associates will welcome your suggestions.

**Other State Association and Component County Society News.**—Additional news concerning the activities and work of the California Medical Association and its component county medical societies is printed in this issue, commencing on page 458.

## EDITORIAL COMMENT†

### CRYSTALLIZED LYSOZYME

The recent crystallization of Fleming's "lysozyme" by Doctors Abraham and Robinson<sup>1</sup> of Oxford University is a major victory in basic immunologic research, which may well lead in time to practical clinical results. This fat-soluble bacteriophage-like substance is present in particularly high titer in the tears and nasal secretions, and is believed by the English investigators to be the major natural defenses of the conjunctiva and nasal mucosa against certain types of bacterial infection. The defensive enzyme is apparently a protein which is particularly rich in the two amino-acids, tyrosin and tryptophan.

This natural antiseptic was discovered in 1922 by Doctor Fleming<sup>2</sup> of St. Mary's Hospital, London, who studied in detail its action on certain non-pathogenic cocci. Wolff,<sup>3</sup> of the University of Amsterdam, afterward showed the lysozyme to be

almost equally effective against certain pathogenic microorganisms, such as the gonococcus, *Staphylococcus aureus*, *Staphylococcus hemolyticus*, meningococci, and tubercle bacillus.

Lysozyme is apparently widely distributed in human tissues. Tears, sputum, and nasal secretions show lytic action on susceptible cocci in dilution as high as 1:300,000. Blood serum, normal saliva, ascitic fluid, cystic fluids, and pus are of lower lytic titers, being rarely effective in dilutions higher than 1:1000. Cerebrospinal fluid, urine, and sweat are practically free from the lytic enzyme, never showing titers greater than 1:10. Aqueous extracts of dehydrated acetone-fixed tissues show cartilage and the gastric mucosa to contain the lytic enzyme in particularly high concentrations, with intermediary concentrations in the liver, tonsils, intestines, and meninges. Kidney and skin give particularly low yields. Traces of the lytic enzyme are demonstrable in many vegetables, *e. g.*, turnips.

Unlike the water-soluble Twort bacteriophage the Fleming fat-soluble, "lysozyme," is equally active against dead bacteria. At 37 degrees centigrade an opaque suspension of living or dead *Micrococcus lysodeikticus*, for example, is almost completely cleared in a few seconds. The Twort bacteriophage requires several hours to effect an equal degree of lysis.

Like the bacteriophage, however, the amount of lysozyme in a bacterial suspension increases as a result of lysis, the increase being roughly proportional with the number of bacteria dissolved. Serial transmission of the lysozyme, however, has not yet been accomplished.

Lysozyme-resisted strains of susceptible cocci are readily produced by growing the cocci in the presence of sublytic concentrations of the enzyme. Cocci which have an acquired resistance to the lysozyme in human tears are equally resistant to lysozymes from other animal or vegetable tissues. This suggests that all lysozymes thus far studied are of the same immunochemical specificity.

Lysozyme is a remarkably stable enzyme. It may be stored without appreciable deterioration for many months, with or without the addition of chemical preservatives. It can be precipitated by alcohol or acetone without loss of titer, can be desiccated and redissolved in aqueous solution without depreciation. Unlike the Twort bacteriophage, the Fleming lysozyme is not inhibited by defibrinated blood.

The fact that lysozyme has no demonstrable bactericidal effects in *S. viridans*, pneumococcus, diphtheria bacilli or colon bacilli, detracts but little from its practical clinical interest. Its alleged high titer against the gonococcus would in itself justify its detailed study.

The Oxford biochemists found that lysozyme may be crystallized from n/20 acetic acid extracts by concentrating the extracts in a vacuum desiccator. The initial products thus obtained are dodecahedral crystals. Purification by repeated crystallization has not yet been reported. Injected intravenously into laboratory animals, lysozyme disappears rapidly from the circulation. Wolff<sup>3</sup>

†This department of *CALIFORNIA AND WESTERN MEDICINE* presents editorial comments by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

<sup>1</sup> Abraham, E. P., and Robinson, R.: *Nature*, 140:24 (Aug. 3), 1937.

<sup>2</sup> Fleming, A.: *Proc. Roy. Soc. B.*, 93:306, 1922. Fleming, A., and Allison, V. D.: *Brit. J. Exp. Path.*, 3:252, 1922.

<sup>3</sup> Wolff, L. K.: *Zeitschr. f. Immunitätsforsch.*, 50:88, 1927; 54:188, 1927-1928.